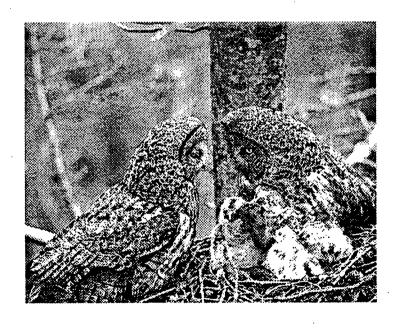
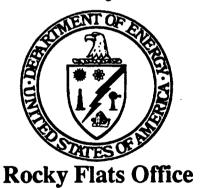
Environmental Restoration Program



Monthly Report for February 1993



March 20, 1993

Reviewed for Classific cition/UCNI BY Lalfa U NAU DATE 412/93

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EXECUTIVE SUMMARY

SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR FEBRUARY 1993

In OU 1, a gamma detector was installed in Building 891, and start-up and testing of the unit is in progress. The detector will give Real Time Radiological measurements of the treated effluent water. The Health and Safety Plan (H&SP), Sampling and Analysis Plans (SAP), and the OU 1 Interim Measure/Interim Remedial Action (IM/IRA) Operations and Maintenance (O&M) Manual are complete. Standard Operating Procedures (SOPs) are currently under review.

The OU 2 Technical Memorandum (TM) #7, Final Surficial Soil Sampling Plan, was submitted to the regulatory agencies on February 12, 1993, and Draft TM #8, Revised Phase II Resource Conservation & Recovery Act (RCRA) Facilities Investigation / Remedial Investigation (RFI/RI) Bedrock Work Plan, started Department of Energy (DOE) review on February 15, 1993.

Twelve drums of sludge generated by the OU 2 Surface Interim Measure / Interim Remedial Action (IM/IRA) were processed and packaged during the month of February in OU 2. A schedule of weekly sludge processing and packaging was established to guarantee continuity in the solids handling for the system. Successful water treatment continues.

OU 4 had three TMs that were completed during February 1993. TM #3, Draft Environmental Evaluation, TM #2, Modification to Field Activities, and TM #4, Human Health Risk Assessment (HHRA)/ Exposure Scenario, were completed on February 19, 1993.

All field activities were completed in the buffer zone in accordance with the conditionally approved OU 4 Phase I RFI/RI Work Plan.

The OU 5, Draft TM #6, Cone Penetration Testing (CPT) and Bat © Sampling, was approved by the regulatory agencies on February 8, 1993. The Draft TM #7, Soil Borings at Individual Hazardous Substance Site (IHSS)133, was also approved by the regulatory agencies.

A total of 30 wellpoints were installed between February 1 and February 5, 1993, in the OU 5 Walnut Creek Drainage. This is a requirement of TM #1, Revised Network Design - Surface Water and Sediment Sampling.

Also in OU 5, the Field Instrument for Detection of Low Energy Radiation (FIDLER) survey was completed at all three disturbed areas of IHSS 209 on February 2, 1993; no irregular readings were recorded. TM #10, Soil Sampling Plan - Surface Disturbance Areas, was submitted to the regulatory agencies for review.

During the month of February, considerable progress was made on OU 7 TMs. Compaents by the regulatory agencies on TM #1, Exposure Assessment, were completed during the week ending February 26, 1993. TM #2, Modeling, was completed February 19, 1993, and submitted to the regulatory agencies for review. TM #3, Surface Soil and Asbestos Disposal Area

DOE, ROCKY Flais Plant
Characterization Plan, and the TM for surficial soil sampling within IHSS 114 were submitted to
the regulatory agencies for review on February 5, 1993. Approval from the regulatory agencies to
start surficial soils sampling within IHSS 114 was received on February 23, 1993.

PROBLEMS AND PROGRAMMATIC ISSUES

Procurement and Quality Action Team Status

The EG&G Quality Action Team (QAT) Working Group is continuing to review and evaluate Procurement policies and procedures in an attempt to streamline the process. Signatures required for dollar thresholds and special item purchases are being reviewed to see if they are justified. If the signatures are proven to be not fully justified, they will be eliminated to save time by simplifying the approval process. Additionally, work continues on development of a plarned 2-hour briefing on the mission and status of the Environmental Restoration Management (ERM) program at Rocky Flats Plant (RFP). This training will be offered primarily to all Procurement personnel that must interface with ERM. It is intended to provide them with a better understanding of ERM drivers and issues in an attempt to enhance basic TQM theories.

Procurement personnel with the Environmental Services Branch were invited to attend the DOE, HQ 1-day EM Orientation Program presented at the Arvada Center on February 24, 1993, and February 25, 1993.

The DOE has approved the Source Selection Plan for the Environmental Architectural & Engineering (A&E) Master Task Subcontract (MTS) Source Selection Plan. A Commerce Business Daily (CBD) announcement soliciting interested firms will be published in March 1993.

Other

The regulatory agencies met on February 8, 1993, with DOE and EG&G and discussed the OU 1 Draft Remediation Investigation (RI) Report. A follow-up meeting discussed EG&G's Program Management Plan (PMP) for addressing comments on the RI Report and the rewriting of the report. It is clear that the April 2, 1993 IAG schedule for submittal of the Final RI Report will not be met and as of February 28, 1993, no revised schedule has been agreed upon. Because of the unresolved RI issues, the OU 1 Feasibility Study (FS) schedule is lagging. Follow -up surveys for IHSSs 119.1, 119.2, and 130 were postponed, and work on TM #11, Alternatives Array, is on hold until the major issues are resolved.

A 9-month milestone extension on the submittal of the Draft OU 2 Phase II RFI/RI Report from the regulatory agencies was requested. Supporting information is being gathered to substantiate the schedule extension request. Meanwhile, EPA sent a letter to DOE/HQ on February 10, 1993, that threatens fines and stipulated penalties if the original IAG scheduled delivery date of March 12, 1993, for the OU 2 Draft RFI/RI Report is not met.

The U. S. Fish and Wildlife Service (USFWS) has identified a bald eagle nest northwest of Standley Lake. DOE has post-

poned all OU 3 field activities within a 1 - mile radius of the nest. Construction and operation of the air monitoring sites and the wind tunnel study scheduled to begin this spring will be delayed by the presence of the eagles' nest.

The Colorado Department of Health (CDH) sponsored Health Advisory Board criticized data gathered on offsite contamination in OU 3 that is generated by DOE and discussed conducting confirmatory sampling. The Health Advisory Board wants to conduct shared soil sampling among DOE and Colorado State University (CSU) and to split the samples three ways. The three-way split of soil samples would be analyzed by CDH, DOE and a laboratory determined by the Health Advisory Board.

NEAR-TERM IAG MILESTONES

OU	Milestone Description	Due to EPA/CDH
2	Submit Subsurface Final IM/IRA Test Plan 1	Jan 12, 1993
Sitewide	Annual Treatability Study Report	Mar 8, 1993
2	Draft Phase II RFI/RI Report	Mar 12, 1993
1	Draft Corrective Measures Study (CMS)/Feasibility	
	Study (FS) Report	Mar 31, 1993 **
1	Submit Final Phase III RFI/RI Report	April 2, 1993

^{**}EPA and CDH approved an extension on the OU 1 Draft CMS/FS to June 29, 1993.



SECTION 1. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for February 1993. This program implements the Interagency Agreement (IAG) among the U.S. Department of Energy, the U.S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess, and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats Plant in Golden, Colorado. This agreement was signed on January 22, 1991. The work is being performed for DOE by EG&G Rocky Flats, Inc.

Technical progress, schedule status, and milestone status for each OU as well as other program activities are presented in Section 2. Section 3. contains the schedules for routine environmental sampling as required by Paragraph 210 of the Interagency Agreement. Section 4. contains a list that identifies the contractors and subcontractors performing work on the program as required by Paragraph 13 of the IAG.

SECTION 2. PROJECT STATUS

2.1 OU 1 - 881 HILLSIDE AREA

The alluvial ground water at the 881 Hillside Area, located north of Woman Creek in the southeast section of RFP, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is almost two miles from the eastern, outer edge of the plant's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSS) that make up OU 1 are being investigated and treated as high-priority sites because of elevated concentrations of organic compounds in the near-surface ground water and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface ground water flowing from the OU 1 area. The near-surface water is treated at the 891 treatment facility, designed for this purpose, and released onsite into the South Interceptor Ditch along side Woman Creek. IRA construction was completed in April 1992. The Remedial Investigation and Feasibility Study (RI/FS) to determine the final remedial action are continuing in parallel with the IRA.

2.1.1 OU 1 ASSESSMENT

Scope of Work Changes None This Period

Technical Approach Changes This Period

None

IAG Milestone Accomplishments Submit Draft Phase III RFI/RI Work Plan 06 Feb 90
Submit Final Phase III RFI/RI Work Plan 31 Oct 90
Submit Draft Phase III RFI/RI Report 28 Oct 92

February Work Activity
Status

A meeting requested by the regulatory agencies was held on February 8, 1993, to discuss the OU 1 Draft RI. The regulatory agencies presented over 100 pages of comments to DOE. These comments represent a model RFI/RI Report for the rest of the program.

A follow-up meeting was held on February 10, 1993, among the regulatory agencies and DOE to discuss EG&G's Program Management Plan (PMP) for addressing comments on the RI Report and the rewriting of the report. With a few exceptions, the regulatory agencies and DOE accepted the plan developed to respond to their comments on the RI Report and to revise the document to the requirements established by the regulatory agencies.

It was decided to hold a weekly meeting with the regulatory agencies to resolve the issues on the RI. The major issues for discussion this month at the weekly meeting were IHSS 102, the plutonium hotspot, the ecological risk assessment, and EG&G's PMP to respond to comments from the regulatory agencies.

The survey that defined the radionuclide hotspot on the 881 Hillside was concluded. IHSSs 119.1, 119.2, and 130 were surveyed. The follow-up surveys originally planned were post-poned pending resolution of issues raised by EPA relative to the surveys. Issues of coverage, follow-up criteria, SOPs, etc. were discussed at the weekly February 22, 1993, meeting with the regulatory agencies.

TM # 10, Remedial Action Objectives, will not be submitted to the regulatory agencies as originally anticipated. The TM will be postponed until after procedures and policies are resolved in the RI.

Work on the screening of technologies and development of alternatives is currently being developed for TM #11, Alternatives Array. Work on this TM will stop until the RI issues are resolved.

Planned Work for March

- Follow-up surveys with the High Purity Germanium (HPGe) sampler in IHSSs 119.1 119.2, 130.
- Continue responding to the comments on the RI Report from the regulatory agencies.
- Weekly meetings with the regulatory agencies to resolve RI issues are being held. Follow-up meetings on technical areas are also being held.

Problems

The FS schedule is lagging due to unresolved RI issues.

Investigation of the Plutonium anomalies is out of scope work.

Open Items

Ability to meet the IAG schedule for development of the Final RI Report cannot be met. Agreement has still not been reached on a revised schedule.

Many major issues on the approach to revision of the RI Report remain unresolved. Discussions are continuing.

2.1.2 OU 1 REMEDIATION

Scope of Work Changes
This Period

None

Technical Approach Changes This Period None

IAG Milestone Accomplishments Submit Draft Proposed IM/IRA Decision Document
Submit Proposed IM/IRA Decision Document
Submit Final IM/IRA Decision Document
Submit Proposed IM/IRA Decision Document
Submi

Begin Phase I-B IM/IRA Construction	
(ahead of schedule)	28 Sep 90
Submit IM/IRA Implementation Document	22 Feb 91
Begin Phase II-A IM/IRA Construction	01 Apr 91
Begin IM/IRA Testing	05 Aug 91
Begin Phase II-B IM/IRA Construction	03 Sep 91
Complete IM/IRA Construction (Bldg. 891)	02 Mar 92
Complete IM/IRA Construction (French drain)	13 Apr 92

February Work Activity Status

The four drums of solid neutralized hydrochloric acid (HCl) in Building 891 were consolidated to three drums. Landfill operations approved shipment of all three of the drums to the landfill. Trucking picked up and transported the drums to the landfill on February 22, 1993.

Approximately 57,200 gallons of ground water were treated during the month of February. The total water collected as of the end of February is approximately 907,400 gallons; the total discharged treated water is approximately 800,500 gallons. Effluent Tank 207 is being filled, Tank 205 is empty, and Tank 206 is full and awaiting analysis.

The new SOPs for Treatment Building 891 are currently under review. Comments and revisions started the week ending February 26, 1993.

A gamma detector was installed in Building 891, and start-up and testing of the unit is in progress. The detector will give Real Time Radiological measurements of the treated effluent water.

Design work for the 881 Hillside French drain surface water monitoring stations is in progress. The project schedule should be shortened by a few weeks by having the engineering performed by plant personnel. A completion date of April 1, 1993, was requested by DOE.

The proposal for the O&M of the OU 1 and OU 2 Treatment Facilities was received. The technical evaluation was submitted on February 11, 1993. The new subcontractor to operate the OU 1 and OU 2 Treatment Facilities could be onsite as early as March 8, 1993.

The H&SP, SAP, and the OU 1 IM/IRA O&M Manual are complete. SOPs are currently under review.

Planned Work for March

- Begin transition of new subcontractor for O&M duties at OU 1 and OU 2 IRAs.
- Follow up on comments and revisions on SOPs.
- Issue purchase requisition for B-891 gas chromatograph.

DOE, Rocky Flats Plant -

Problems

The high-level alarm for Tank 209 (acid storage tank) has failed because of acid fumes created during the acid spill on December 21, 1992. Replacement instrumentation is on order.

The B-891 Programmable Logic Controller Panel View Monitor is not working properly, but remains functional. The vertical hold on the panel view is defective. Negotiations with the manufacturer of the unit are in progress.

Open Items

None

2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES

The contamination at the 903 Pad and Mound areas is largely attributed to the storage in the 1950s and 1960s of waste drums that corroded over time, allowing hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent, some of which may have contaminants that were not removed by the treatment system.

An IM/IRA provides for surface water in source areas of contamination to be collected, treated, and discharged to the surface water drainage. Operation of a field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process will be evaluated at three locations: the entrance to the treatment facility, several points within the facility, and the discharge point. After completion of the field-scale treatability tests, the unit is anticipated to remain in service until the final remedial action is operational. The Remedial Investigation (RI) and Feasibility Study (FS) are continuing in parallel with the IRA.

A second IM/IRA was established in late-1991. This Proposed Subsurface Investigation Interim Measure/Interim Remedial Action Plan/Environmental Assessment (IM/IRAP/EA) is north of Woman Creek and encompasses the 903 Pad, the Mound Area, and the East Trenches Area of OU 2. This IM/IRAP/EA identifies and evaluates interim remedial actions for removal of residual free-phase VOC contamination from three distinct subsurface environments at OU 2. Each of the proposed VOC-removal actions involve *in situ* vacuum-enhanced vapor extraction technology. The interim remedial actions are proposed for the collection of information that will aid in the selection and design of final remedial actions that address subsurface, residual free-phase VOC contamination at OU 2.

2.2.1 OU 2 Assessment

Scope of Work Changes	None
This Period	

Technical	Approach	ì
Changes	This Period	

None

IAG Milestone	Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
Accomplishments	Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
/ CCC//plistiffering	Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
	Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91
	Submit Subsurface Site I Draft Test Plan	29 Oct 92

Submit Subsurface Site I Final Test Plan 12 Jan 93

February Work Activity Status DOE requested a 9-month milestone extension on the submittal of the OU 2 Draft Phase II RFI/RI Report from the regulatory agencies. DOE is gathering supporting information to provide detailed justification for the schedule extension request. An independent schedule development and review of the extension request was initiated. Additional personnel resources were assigned to the management team.

EPA sent a letter to DOE Headquarters (HQ) on February 10, 1993, that threatens fines and stipulated penalties if the original IAG scheduled delivery date of March 12, 1993, for the Draft RFI/RI Report is not met. DOE is meeting with the regulatory agencies on a regular basis to resolve the schedule issue and the bedrock schedule is being streamlined to expedite the entire RFI/RI Report timetable.

The regulatory agencies received the Exposure Scenario and Modeling TMs for the OU 2 HHRA. Comments are still being completed by the regulatory agencies. The Draft Final Exposure Scenario TM and the Draft Final Modeling TM were submitted to the regulatory agencies on January 25, 1993, and comments were due on February 12, 1993, but have not been received.

TM #7, Final Surficial Soil Sampling and Analysis Plan, was submitted to the regulatory agencies during the week ending February 12, 1993. TM #7 provides the Field Sampling Plan (FSP) for the collection of surficial soil samples for the Human Health Risk Assessment (HHRA).

Draft TM #8, Revised Phase I RFI/RI Bedrock Work Plan, was submitted for DOE review on February 15, 1993. The TM is based on information gathered from the alluvial investigations, describes a site conceptual model, and provides a FSP for bedrock investigation to confirm this model.

Work is continuing on the development of the Contaminants of Concern (COC) TM for the OU 2 HHRA. A TM is being developed discussing a preliminary COC list. A bid proposal to collect 52 surficial soil samples for the HHRA was received on January 19, 1993. A letter of contract for collection of surficial soils was issued February 25, 1993.

Work continues on the RI Report for the characterization and the nature and extent of contamination.

The technical review of three bids for the Soil Vapor Extraction Mobile Test Unit is complete. Negotiations and contract award are expected by the middle of March. HSPs for the Soil Vapor Extraction Mobile Test Plan were sent to H&S for review and comment. HSP for the Soil Vapor Survey are being revised to incorporate H&S comments previously submitted.

A proposal from a MTS bidder for the Soil Vapor Survey has been received. The bid was reviewed during the week ending February 12, 1993; the final contract will be released after negotiations are completed. The technical evaluation for the Soil Vapor Survey was completed and is now in final negotiations. A contract is expected soon.

Planned Work for March

- Negotiate and award a Bedrock Field Investigation Contract.
- Begin surficial soil sampling as per TM #7.
- Continue ground water modeling of OU 2 alluvium.
- Follow-up on negotiations and contract award for the Soil Vapor Extraction Mobile Test Unit.

Problems

EPA sent a letter to DOE, HQ on February 10, 1993, that threatens fines and stipulated penalties if the original IAG scheduled delivery date of March 12, 1993, for the Draft RFI/RI Report is not met.

The "Super Task" subcontract SOW was delayed because of contract management issues.

Completion of TM #8, Revise Phase II RFI/RI Work Plan, was delayed past its scheduled completion date because of contracts not being in place in order to complete this document on schedule.

Open Items

EG&G is anticipating a response from the regulatory agencies to the February 22, 1993, Draft Phase I RFI/RI extension request. Stipulated fines and penalties may be levied.

2.2.2 OU 2 Remediation

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments

Submit Draft Proposed IM/IRA	
Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA	, , , , , ,
Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90
Submit Final Responsiveness Summary and	
Final IM/IRA Decision Document	11 Jan 91
Field Treatability Test System Installation Complete	10 May 91
Begin Field Treatability Testing (Carbon System)	13 May 91
Submit Draft Treatability Test Report (Phase I GAC)	01 Apr 92
Complete IM/IRA Construction (radionuclides	_
removal system)	24 Apr 92
Begin Field Treatability Testing (radionuclides	_
removal system)	27 Apr 92
Submit Final Treatability Test Report (Phase I GAC)) 02 Jun 92

DOE, Rocky Flats Plant

February Work Activity Status

The Field Treatability Unit (FTU) collected, treated, and discharged 594,800 gallons of surface water during the month of February. Influent flows to the system were above normal, and the iron feed rate was increased to facilitate the additional flow and turbidity. Flows, turbidity, and chemical feed rates have returned to normal.

Twelve drums of sludge were processed and packaged during the month of February. A schedule of weekly sludge processing and packaging has been established to guarantee continuity in the solids handling for the systèm.

The 10 to 20 gallons of diesel fuel that were spilled at the project site on January 14, 1993, were cleaned up. Samples were obtained from the spill and sent to the laboratory for analysis. Results from the analysis indicated that the material contained no RCRA constituents. The 14 drums of cleanup material will be handled as nonhazardous waste.

Planned Work for March

 Routine operation will continue in March. This will include water sampling to characterize the process, sludge processing, sampling and package, and monitoring and operating the system in accordance with requirements. Preparation of the Draft Phase II Treatability Study Report will be advanced during the month.

Problems

None

Open Items

None

2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG directs activities according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This involves assessment of contamination in offsite areas also referred to as IHSS: Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay v. U.S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

Scope of Work Changes	None
This Period	

Technical Approach Changes This Period

None

IAG	Milestone
Acc	omplishments

Submit Draft Past Remedy Report	26 Oct 90
Submit Draft Historical Information/	
Preliminary Health Risk Assessment Report	09 Nov 90
Submit Final Past Remedy Report	02 Apr 91
Submit Final Historical Information/	•
Preliminary Health Risk Assessment Report	16 Apr 91
Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
Submit Final Phase I RFI/RI Work Plan	06 Dec 91

February Work Activity Status The USFWS has identified a bald eagle nest northwest of Standley Lake. DOE has postponed all field activities within a 1-mile radius of the nest. Several sampling activities remain to be completed in OU 3 field work. Surface soil sampling will not be affected by DOE's decision to postpone sampling activities because the remaining sampling locations are outside the mile limitation. Soil locations will continue to be sampled when the weather permits. Construction and operation of the air monitoring sites and the wind tunnel study scheduled to begin this spring will be affected by the presence of the eagles nest. These two activities will not be initiated until consultation is completed with the USFWS to determine the potential affect on the bald eagles. A proposal is being developed to initiate consultation with the USFWS. This proposal will outline all activities affected by this action, the required schedule, and the proposed impact on the eagles. This consultation process will determine if these activities can be conducted.

The engineering job order (EJO) and associated paperwork for construction of the offsite air and meteorological monitoring sites are being revised. A scope and estimate of the project is being conducted. A design to build the enclosures for the meteorological and air monitoring sites was completed.

The Environmental Evaluation (EE) field work was reviewed at a meeting on February 24, 1993. This meeting reviewed the current status of the EE work in response to the experience gained from OU 1.

Negotiations are continuing with offsite landowners for access to surface soil sampling locations. A "best effort" is being used to relocate locations.

A meeting was held February 5, 1993, with representatives from the three organizations currently conducting studies on offsite contamination: the CDH sponsored Health Advisory Board, CSU, and DOE. The Health Advisory Board criticized data generated by DOE and discussed conducting confirmatory sampling. A proposal was discussed at the meeting to conduct shared soil sampling among DOE and CSU and to split the samples three ways. The three-way split of soil samples would be analyzed by CDH, DOE, and a laboratory determined by the Health Advisory Board. A response from the citizens faction of the Health Advisory Board on this proposal is expected shortly.

Adverse weather conditions limited collection of surface soil · samples to only one week during February. During this time, the first quarterly samples were collected from the two monitoring wells drilled earlier in the month. A small fracture zone was found in one well below Standley Lake Dam and is producing a positive surface pressure flow of about 1 gallon per minute.

Planned Work for March

- Develop proposal to initiate consultation with the USFWS. This proposal will outline all activities affected by this action, the required schedule, and the proposed impact on the eagles.
- Conduct a scope and estimate of the offsite air and meteorological monitoring project.
- Continue negotiations with offsite landowners for access to surface soil sampling locations.
- Continue work on a scope and estimate for the offsite air and meteorological monitoring sites.
- A TM outlining the Wind Tunnel Sampling Plan is scheduled for delivery to the regulatory agencies.
- The first HHRA TM on the Exposure Scenario is scheduled for delivery to the regulatory agencies.

The USFWS has identified a bald eagle nest northwest of Standley Lake. DOE has postponed all field activities within a 1 - mile radius of the nest. Construction and operation of the

Problems

air monitoring sites and the wind tunnel study scheduled to begin this spring will be affected by the presence of the eagles nest.

The Health Advisory Board criticized data gather on offsite contamination that is generated by DOE and discussed conducting confirmatory sampling. The Health Advisory Board wants to conduct shared soil sampling among DOE and CSU and to split the samples three ways. The three-way split of soil samples would be analyzed by CDH, DOE, and a laboratory determined by the Health Advisory Board.

Open Items

None

2.4 OU 4 - SOLAR EVAPORATION PONDS

OU 4 is made up of five solar evaporation ponds: 207A, 207B series (north, center, south), and 207C. Beginning in the late 1950s, the ponds were used to store and evaporate low-level radioactive process water containing high concentrations of nitrates and treated acidic wastes. The sludge and sediments that resulted from the process were periodically removed and disposed of at the Nevada Test Site.

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and ground water was detected. Interceptor trenches were installed in 1971 to collect and recycle ground water contaminated by the ponds and to prevent natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were replaced by the current, larger, interceptor trench system which recycles approximately four million gallons of ground water a year back into the solar evaporation ponds.

No additional process water has been pumped into the ponds since 1986. The interceptor trench system collects and recycles ground water into the solar evaporation ponds continuously. Presently, only the 207B north solar evaporation pond receives contaminated ground water collected by the interceptor system. The ponds are RCRA interim status regulated units that are currently under closure. In order to proceed and characterize the level of contamination at the site, approximately eight million gallons of excess liquid in the ponds must be removed. The removal of this liquid and the redirection and treatment of the ground water by the interceptor trench system are the focus of the final IM/IRA dated April 1992, which began construction in May 1992.

The April 1992 IM/IRA was developed to facilitate DOE fulfilling commitments under the AIP and IAG. DOE attempted to modify an existing permit for water removal and treatment for liquids in the solar ponds and ground water collected by the intercepter trench system, but the regulatory agencies rejected permit modification and required development of an IM/IRA to document operation and use of the proposed water treatment system. The development and implementation of this IM/IRA precedes the IAG scheduled Phase I RFI/ RI field work.

There is an IM/IRA scheduled in the IAG that will be completed after results are collected and analyzed from the Phase I RFI/RI field work. The first draft of the IAG IM/IRA is scheduled for delivery in April 1994.

2.4.1 OU 4 ASSESSMENT

Scope of Work Changes None

This Period

Technical Approach

Modified sampling below 207 liner.

Changes This Period

Accomplishments

IAG Milestone

Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan

08 Jun 90 26 Nov 91

- ...

February Work Activity Status

Field activities (drilling, sampling, radiological surveys, etc.) continued in the Protected Area (PA). Borehole 43993 was completed to a total depth (TD) of 18.5 feet below grade. Analytical and vadose zone boreholes 41793 and 41693 were started, but are not complete.

TM #3, Draft Environmental Evaluation; TM #2, Modification to Field Activities; and TM #4, Human Health Risk Assessment/ Exposure Scenario, were completed on February 19, 1993. The TMs will be distributed to DOE for review and comment.

Two drilling rigs are operating within the PA. One drilling rig is dedicated to analytical boreholes, and the other is dedicated to vadose zone boreholes. The analytical rig is currently operating within the radiologically controlled area (RCA). Borehole 43893 was completed. Surficial soil samples were collected from boreholes 41593, 43193, 43793, and 44093.

On February 4, 1993, the analytical drilling rig was set up on borehole 43993 ready to drill and collect samples. As the mast was about to be raised on the drilling rig, the drilling operation was shutdown due to a perceived safety problem that the drilling rig was too close to overhead power lines. The drilling rig was moved from the RCA to ensure that no drilling would take place. Borehole 43993 was cleared for drilling prior to February 4, 1993, and at that time it was determined that the borehole was not too close to the power lines to justify ceasing drilling operations. This incident is under investigation.

A SOW and additional necessary documentation were completed to cover the addition of work needed to be performed for the OU 4 Phase I RFI/RI work plan.

All field activities have been completed in the buffer zone in accordance with the conditionally approved OU 4 Phase I RFI/RI Work Plan.

Surficial soil samples were collected from borehole locations 40393, 40593, 43593, 42393, and 41193. One borehole and associated vadose zone tests were completed in the buffer zone at borehole 40593. Casing was set in borehole 43593. Boreholes 42393 and 41193 were completed in the PA.

A meeting was held with the regulatory agencies to discuss revisions of borehole locations, omission of boreholes, angle/horizontal drilling, schedule extensions, and the general status of the OU 4 Phase I RFI/RI program. The regulatory agencies agreed to the revised borehole locations (drilling was deferred inside ponds that are not empty) and to innovative drilling below ponds that have not been cleaned out. Also, DOE agreed to submit a TM reflecting the revised borehole locations and angle/horizontal drilling.

The Solar Ponds Remediation Program (SPRP) made a presentation in the monthly briefing to DOE, HQ in Washington, D. C. An update was presented on the Systems Analysis for pond sludge processing options. The analysis identified the preferred path for OU 4 activities. A final briefing on the Solar Ponds (SP) Systems Analysis Study is scheduled for March 9, 1993, at DOE, HQ.

Planned Work for March

- Drill in Pond 207A
- Drill between B series Ponds; boreholes 43493 and 42293.
- Collect ground water elevation data.
- Drilling at borehole 43993 was shutdown because of a perceived safety problem that the drilling rig was too close to overhead power lines. This incident is under investigation.

Open Items

Problems

Milestone Schedule IM/IRA Solar Evaporation Ponds OU 4.

Original Date	Revised Date	<u>Status</u>
March 1, 1992	April 6, 1992	Complete
June 1, 1992	July 7, 1993	In Progress
,		
June 8, 1992	June 28, 1993	Pending
June 15, 1992	September 9, 1993	Pending
	March 1, 1992 June 1, 1992 June 8, 1992	March 1, 1992 April 6, 1992 June 1, 1992 July 7, 1993 June 8, 1992 June 28, 1993

2.4.2 OU 4 REMEDIATION

Scope of Work Changes None

This Period

Technical Approach Changes This Period

None

IAG Milestone **Accomplishments** None. The first IAG remediation milestone for this OU is the Draft Phase I Proposed IM/IRA Decision Document scheduled for April 14, 1994.

February Work Activity Status

Program Management/Administration - Laboratory analysis from past Solar Ponds' studies have generated approximately 3,000 gallons of liquid wastes, which are currently in storage. Because of schedule changes, the original plans to hold the waste until the cementation process is operating are no longer viable. Efforts are underway to identify an appropriate storage location at RFP and proper shipping configurations. Current estimates show about 100 drums will be needed for storage.

DOE has transmitted the revised milestone dates for the IM/IRA remediation to the regulatory agencies. DOE met with the regulatory agencies to explain the details of the schedule and discuss related issues. Further meetings will be needed to help the regulatory agencies fully analyze DOE's schedule.

The regulatory agencies stressed their interpretation that the IM/IRA is part of the IAG, and their plans to enforce the originally approved dates. What enforcement actions they may choose to pursue seem to contingent on near-term performance on the IM/IRA activities.

In a February 17, 1993, meeting, the first monthly status meeting for SPs was held with the regulatory agencies. CDH indicated that all technical issues on the OU 4 Work Plan were resolved, and that CDH would issue final unconditional approval of the Work Plan. Additional topics discussed at the meeting included OU 4 Assessment, Analysis of Options for Pond Sludge Removal, Consolidation of B Pond Sludge and Removal of Excess Water, Interceptor Trench System (ITS) Diversion, and the Supplemental Budget Submission. A detailed explanation of cover water, slurry water, and excess water was presented at the meeting along with the logistics of sludge consolidation. The regulatory agencies indicated they placed a high priority on removal of excess water from the ponds. The understanding of these issues by the regulatory agencies is vital to reaching an agreement on what constitutes successful removal of excess water. The regulatory agencies showed great interest in the sludge processing options under development, and requested that their input to DOE be included in the presentation to HQ.

Work continues on developing the SPRP Sub-Project baseline that is part of DOE Order 4700.1, Implementation for the ER Major Systems Acquisition (MSA). The Sub-Project baseline includes the Technical, Schedule, and Cost baselines, the Work Breakdown Structure (WBS), and Resource Requirement (RR) documents. The Sub-Project baseline will be presented to HQ personnel on March 9, 1993, as part of the upcoming HQ review.

Pad Operations and Storage - A meeting was held on January 26, 1993, to develop a Memorandum of Understanding (MOU), which defines the authority and responsibilities for the Solar Ponds Project Office (SPPO) and organizations that function with SPPO. At the meeting it was decided that the technical content of the MOU be presented in matrix form and the matrices were completed. The work package activities and the Hazardous Waste Requirements Manual provided two starting points to identify specific tasks and responsibilities. At a February 1, 1993, meeting, lists of activities and identified responsible parties were submitted. Additional work on the MOU is pending.

SPRP received the draft text of the Pad Storage Density Study. The study compares various storage alternatives regarding cost, schedule, and compliance impacts. Alternatives include waste pile storage, container storage with and without rebagging, container storage in oversize 1/2 crates, and containment building storage. Preliminary results indicate that all alterna-

tives are very close in life cycle costs. Major differences between the choices are schedule and program compatibility.

The draft of the engineering study on using the 231 tanks to store pondsludge was received.

Water Management - Analysis has indicated that the best solution to the concern about injecting Product Water in the Plant Raw Water System is to discharge distillate into the Steam Condensate System. A final decision is pending a Scope and Estimate and a detailed analysis of condensate flows and surge capacity.

A meeting was held on February 12, 1993, with the regulatory agencies, and the schedule for Water Management activities was reviewed in detail. At the meeting it was agreed to recalculate the finish date for excess water removal from the ponds assuming both the B-910 and B-374 Evaporators were used. SPPO also agreed to provide the plan, schedule, and rationale for sludge consolidation. Further analysis of water from the tanks and the leakage sumps has produced results that appear to indicate a leak in the temporary modular storage tanks. Work began to remove ice from the first of the three modular tanks. After the ice is cleared, the 20-mil UV liner will be taken out of the tank, and the 80-mil primary liner inspected. As part of a hydrostatic test of the new Modular Tanks, a tracer will be added to the test water. Testing the water between the tank and the inner liner for the tracer will clearly determine if a leak is present and any leak detected will be repaired. Excess water in this interstitial space could have been present in the tank before the liner was installed or leaked in during other construction activities. This procedure will be repeated for each of the tanks prior to use for storage of Interceptor Trench System (ITS) water. It is also planned to discharge the test water by way of the plant's surface ponds once this activity is complete. Discharge through the surface ponds meets all environmental requirements while avoiding interference with ongoing waste plant treatment activity.

Construction Component testing of the evaporators in Bldg. 910 is now complete. The supervised technology transfer and training has begun; this activity will continue for another week.

The regulatory agencies approved the use of the 374/774 waste transfer line. Since the pipe does not have secondary containment inside the building, the project will arrange daily inspections of the interior line for leaks. Pumping of water from the Solar Ponds to the Building 374 evaporators began February, 23, 1993.

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Planned Work for March

 Continues work on developing the SPRP Sub-Project baseline that is part of DOE Order 4700.1 implementation for the ER Major Systems Acquisition (MSA).

Problems

None

Open Items

None

2.5 OU 5 - WOMAN CREEK

This activity encompasses assessment and remediation in the Woman Creek drainage of 10 IHSS. These are: Original Landfill (IHSS 115); Ash Pits (IHSS 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSS 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881. Two additional surface disturbances have been identified and are located, one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. Possible contamination in this operable unit was caused by landfill operations, storm water run-off into holding ponds, and ash-pit operations. Constituents in OU 5 are believed to include nitrates, plutonium, uranium, metals, beryllium, solvents, pesticides, oils, paints, and cleaners. Medias affected include soils, sediments, surface water, ground water, and air resuspension.

Scope of Work Changes 1
This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan 05 Apr 91 30 Aug 91

February Work Activity Status

The purpose of the HPGe Survey is to determine optimal surface soil sampling sites. Work on the HPGe is estimated to take 23 days to complete. However, if adverse weather develops while the survey is being conducted, the survey could take as long as 35 days. The field work can only be conducted when the ground is relatively dry and no snow or little snow is present. The wind must be less than 5 to 10 miles per hour (mph) because of the vehicle and equipment profile. The field portion of the program should be completed on April 16, 1993. After completion of data collection, data evaluation will take another 8 to 10 days. The HPGe was moved out of the critical path for completing the field work at IHSS 133. However, if any hotspots are identified during the remainder of the HPGe survey, soil samples will be collected in accordance with the RI Work Plan.

The Final TM #5, Revised Soil Gas Sampling Plan - Original Landfill, was approved on January 20, 1993, by CDH. Comments made by the regulatory agencies were responded to, and the regulatory agencies have approved the responses. Field activities began in IHSS 115 on February 9, 1993, on activities that were not mentioned in the regulatory agencies' comments.

Soil gas sampling is progressing at IHSS 133 - Old Landfill, and 120 of the 365 locations have been sampled; the survey will require about 38 more field days. Drilling activities at IHSS 133 are scheduled to begin on March 3, 1993.

Soil sampling is complete except for three sites near Woman Creek in IHSS 115 - Original Landfill. Samples will be collected once the ground thaws. Three samples in RCAs will not be collected until proper permitting takes place.

Draft TM #6, Cone Penetration Testing (CPT) and Bat TM Sampling, was conditionally approved by the regulatory agencies on February 8, 1993. Comments from the regulatory agencies are being responded to in a comment and response format and will be submitted to the regulatory agencies when the preliminary data from the soil gas survey is reviewed. The data generated during the soil gas survey will help to determine the location and spacing of CPT sites at the Old Landfill.

The Draft TM #7, Soil Borings at IHSS 133, was approved by the regulatory agencies. A Comment and Response form was generated and given to the regulatory agencies the week ending February 26, 1993.

TM #4, Surficial Soil Sampling - Ash Pits, was discussed with the regulatory agencies and the draft of TM #4 was submitted on February 26, 1993.

At IHSS 142 (C1 and C2 Ponds), all pond sediment sampling was completed in October 1992 and analytical results are pending. Nonradionuclide results have been returned from the laboratory, but radionuclide results have not been returned. Drilling was completed in four wells below C1 and C2 dams; three of the wells were found to be dry. All four wells will continue to be monitored on a quarterly basis.

A total of 30 wellpoints were installed in the Walnut Creek Drainage. This was a requirement of TM #1, Revised Network Design - Surface Water and Sediment Sampling between February 1 and February 5, 1993. Water height measurement will be made on a monthly basis. Another 20 additional wellpoints will be installed in the IHSS 142 area upon approval of a modification to the SOW.

The FIDLER Survey was completed at all three disturbed areas of IHSS 209 on February 2, 1993; no readings above background were recorded. TM #10, Soil Sampling Plan - Surface Disturbance Areas, was submitted to the regulatory agencies. The TM is being reviewed by the regulatory agencies.

Planned Work for March

- Continue soil gas sampling at IHSS 133 Old Landfill.
 Begin drilling activities at IHSS 133.
- If TM #6 is approved by the regulatory agencies, the CPT may begin by the end of March.

Project Status

Problems

None

Open Items

None

2.6 OU 6 - WALNUT CREEK

This activity encompasses assessment and remediation in the Walnut Creek Drainage of 2 IHSS. They are the A-series Detention Ponds, Ponds A-1 through A-4 (IHSS 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North, Pond, and South Area Spray Fields (IHSS 167.1, 167.2 and 167.3); the East Area Spray Field (IHSS 216.1), the Trenches A, B and C (IHSS 166.1, 166.2 and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165), and the Old Outfall Area (IHSS 143). One additional site, the Soil Dump Area (IHSS 156.2), was transferred from OU 14 to OU 6 in 1991. Two IHSSs, Property Utilization And Disposal Yard (IHSS 170) and Property Utilization and Disposal Container Storage Facilities (IHSS 174) have been transferred from OU 6 to OU 10. 13 ground water monitoring wells will be installed throughout OU 6 to monitor the alluvial aquifer. 5 bedrock ground water monitoring wells will be installed in the vicinity of North Walnut Creek during the OU 6 remedial investigation. To characterize the bedrock aquifer in the vicinity of the A-series ponds, up to 9 additional bedrock ground water monitoring wells may be installed.

Sediment samples will be collected from the Walnut Creek drainage where existing data are insufficient to adequately characterize the sediments. Sediment sampling has been proposed along each stream segment on North and South Walnut Creeks where additional characterization is needed. Based on a review of the data collected at the existing locations along the OU 6 drainage, there is sufficient information about the sediments in many parts of OU 6. Therefore, the sampling locations specified in the RFI/RI Work Plan have been reduced in those areas.

The surface soil sampling has been modified for the Triangle Area (IHSS 165) and the Old Outfall Area (IHSS 143) so that the surface soil samples specified in the IAG will be obtained from the original surface of these units. This will entail boring through the overlying fill material down to the original surface to collect samples.

Scope of Work Changes None
This Period

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan 19 Apr 91 16 Sep 91

February Work Activity Status

Field operations except for seasonal sampling are complete. The HHRA was started.

A meeting was held during the week ending February 19, 1993, to develop the framework for the HHRA. A schedule for all TMs was established, the integration of data from ground water and surface water modeling was discussed to ensure timely coordination, and several exposure scenarios were discussed and will be evaluated in detail by the middle of March 1993.

Soil borings and the monitoring well were completed in IHSSs 143 and 165 this month. Because of underground utilities and two overhead power lines, the locations of some of the borings in IHSS 143 needed to be adjusted. The spacing was decreased

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between borings because of many underground utilities crossing the IHSS and the proximity of the security-zone fenced area. This led to a limited available space for borings to be drilled, and, therefore, only 7 of the proposed 11 borings were completed. The monitoring well was placed in one of the borings.

Soil sampling took place outside of IHSSs in areas where small mammals and vegetation were sampled. This sampling was part of the EE.

Planned Work for March

• Continue work on the HHRA.

Problems

None

Open Items

None

2.7 OU 7 - PRESENT LANDFILL

The Present Landfill - OU 7 is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of two IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill, soils beneath the landfill potentially contaminated with leachate, and sediments and water in the East Landfill Pond. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August of 1968 and was originally constructed to provide for disposal of RFP's nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill, and consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

Scope of Work Changes This Period

None

None

Technical Approach Changes This Period

Submit Draft Phase I RFI/RI Work Plan

08 Jun 90 28 Aug 91

IAG Milestone **Accomplishments**

Submit Final Phase I RFI/RI Work Plan

February Work Activity Status

Drilling continued on upgradient monitoring wells. Work concluded on the final upgradient well cluster during the week ending February 12, 1993.

Two drilling rigs and the CPT rig were operating within IHSS 144 by February 20, 1993. The CPT rig sampled gas in the vadose zone of IHSS 114. This is the final step prior to sampling leachate in the saturated zone. The two drilling rigs installed alluvial monitoring wells and borings sampling through the weathered bedrock.

During the month of February, considerable progress was made on OU 7 TMs. Review by the regulatory agencies on TM #1, Exposure Assessment, was completed the during the week ending February 26, 1993. TM #2, Modeling, was completed February 19, 1993, and submitted to the regulatory agencies for review. TM #3, Surface Soil and Asbestos Disposal Area Characterization Plan, and the TM for surficial soil sampling within IHSS 114 were submitted to the regulatory agencies for review on February 5, 1993. Approval from the regulatory agencies to start surficial soils sampling within IHSS 114 was received on February 23, 1993.

Soil boring sampling within IHSS 114 began on February 10, 1993; one boring is complete. Approximately 10 percent of the landfill materials were recovered. The auger string was frequently wrapped in cables, plastic, and other debris during the operation. Recovery rates increased to nearly 100 percent once the weathered bedrock unit was reached. This increase in recovery rate was expected and was consistent with previous activities within the landfill. Corrective measures are being addressed. Any actual trash that was cored was not sent out for analysis in order to comply with data quality objectives and guidance from the regulatory agencies. Trash will be bagged, described, and labeled with the boring number and the depth interval and then drummed separately from the other cuttings.

A proposed outline for interim submittals for the EE Report was received by DOE on February 3, 1993, and completed on February 17, 1993. This report outlines the format for EE reports and describes the contents of interim deliverables that will be presented prior to submittal of the final draft EE.

Planned Work for March

- Continue drilling activities on upgradient monitoring wells
- Complete BAT Sampling within IHSS 114.
- Complete Surficial Soil Sampling.
- Conduct Monitor Well Pacer Tests.
- Disposition comments on TMs 1, 2, and 3.

Problems

Extendedreview times by the regulatory agencies may impact RFO's ability to meet the IAG milestones.

Open Items

It may be determined by the regulatory agencies that extensive sampling should be performed within the asbestos disposal pits. This is currently not within the approved Work PLan, and, therefore, no current scope or budget exists. Any additional scope will impact the budget and schedule requiring the modification of IAG milestones.

2.8 OU 8 - 700 AREA

The 24 IHSSs which constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats Plant. Contamination sources within the various IHSSs include above ground and underground tanks, equipment washing areas, and releases inside buildings which potentially affected areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and in some cases through precipitation runoff. The chemical composition of the contaminants also varies widely between the IHSSs, ranging from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

During April 1992, 14 IHSSs were deleted from OU 8 and added to OU 9 as part of a IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. The IHSSs that were transferred to OU 9 include: 123.2-Valve Vault West of Building 707, 125-Holding Tank, 126.1 and 126.2-Out-of-Service Process Waste Tanks, 127-Low-Level Radioactive Waste Leak, 132-Radioactive Site - 700 Area Site #4, 146.1-146.6-Concrete Process Waste Tanks, 149-Effluent Pipe, 159-Radioactive Site Building 559. These IHSS changes were recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992.

Scope of Work Changes None This Period

Technical Approach Changes This Period The OU Managers for the Industrial Area (IA) (OU 8, 9, 10, 12, 13, and 14) have consolidated the nonintrusive portions of their Work Plans. This integration has the potential for cost savings and schedule compression based on resource and contracting consolidation, permitting, mobilization/demobilization, and training.

This approach has been incorporated into the rebaselined work packages prepared in December. The integrated approach was provided to the DOE for its input on December 9, 1992. The final rebaselined work packages were presented to the Plant Change Control Board (PCCB) in January 1993.

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan

*EPA/CDH approved an extension on this milestone from September 28, 1992, to December 1, 1992.

February Work Activity Status

Development of OU 8 schedules and cost estimates to support development of the Five-Year Plan (FYP) began on February 5, 1993, and are still in progress. The FYP will outline the required work for FY94 through FY98.

The comment responsiveness summary concerning comments from the regulatory agencies on the Final Phase I RFI/RI Work Plan was delivered on schedule to the regulatory agencies on February 26, 1993.

01 May 92

01 Dec 92*

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Planned Work for March Initiate the contracting process for work concerning the nonin-

trusive field work for the IA OUs.

Problems None

Open Items Complete the IA OU contracting process and finalize sched-

ules for OUs 8, 9, 10, 12, 13, and 14.

2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This activity involves characterizing a series of tanks and associated process waste lines. The Original Process Waste Lines (OPWL) consisted of a system of 57 designated pipe sections extending between 73 tanks and 24 buildings connected by 35,000 feet of buried pipeline that transferred process wastes from point of origin to onsite treatment plants. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced over the 1975-1983 period by the new process waste system. Some tanks and lines from the original system have been incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics and acids. Small quantities of other liquids were also introduced in the system, including pickling liquor from foundry operations, medical decontamination fluids, miscellaneous laboratory liquids from Building 123, and laundry effluent from Buildings 730 and 778. The RFI/RI plan includes inspection and sampling of the OPWL tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred, near pipe joints and valves, at approximately 200-foot intervals along the pipelines and by installing borings around the tanks that are outdoors. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the RFI/RI will determine the need for interim and/or final remediation action.

During April 1992, 20 IHSSs were deleted from OUs 8, 10, 12, 13, and 15 and added to OU 9 as part of a IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. The IHSSs that were transferred to OU 9 include: 123.2-Valve Vault West of Building 707, 125-Holding Tank, 126.1 and 126.2-Out-of-Service Process Waste Tanks, 127-Low-Level Radioactive Waste Leak, 132-Radioactive Site - 700 Area Site #4, 146.1-146.6-Concrete Process Waste Tanks, 149-Effluent Pipe, 159-Radioactive Site Building 559, 124.1-124.3-Radioactive Liquid Waste Storage Tanks, 147.1-Process Waste Leaks/Maas Area, 122-Underground Concrete Tank, and 215-Tank T-40.

The above IHSSs all constitute part of the OPWL and will be investigated and remediated as such. These IHSS changes were recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by the regulatory agencies in April 1992.

Scope of Work Changes None This Period

Technical Approach Changes This Period The OU Managers for the IA (OU 8, 9, 10, 12, 13, and 14) have consolidated the nonintrusive portions of their Work Plans. This integration has the potential for cost savings and schedule compression based on resource and contracting consolidation, permitting, mobilization/demobilization, and training.

This approach has been incorporated into the rebaselined work packages prepared in December. The integrated approach was provided to the DOE for its input on December 9, 1992. The final rebaselined work packages were presented to the PCCB in January 1993.

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IAG Milestone Accomplishments Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan 08 Jun 90 26 Nov 91

February Work Activity Status

The procurement package for the FY93 nonintrusive field work for the Industrial Area (IA) integrated OUs is complete. The MTS procurement process is progressing through its normal cycle and a Contract Award is anticipated in mid-April.

Field investigation requirements were tabulated for Stages I, 2, and 3 for all 13 IHSSs in OU 9. The major tasks involved in this work are as follows:

Stage 1 FSP

- 1 Data compilation
- 2. Prepare TM #1, Stage 1 FSP
- Dig pipeline test pits every 200 ft. and sample the native soil in the pit and trench backfill material looking for contamination.
- 4. Inspect tanks and sample around tank.
- 5. Drill tank boreholes. Stage 1-3 to 6 drill holes are drilled around each tank.
- 6. Radiation Survey

Stage 2 FSP

- 1. Prepare TM #2, Stage 2 FSP
- 2. Drill tank boreholes. Stage 2 drill more holes around tank in a pattern looking for additional contamination.
- 3. Drill pipeline boreholes along pipe trenches

Stage 3 FSP

- 1. Prepare TM #3, Stage 3 FSP
- 2. Pipeline boreholes. Stage 3 drill off to sides of original drilling area to fully define pipeline releases.

Planned Work for March

Procurement activities will continue until mid-April 1993.

Problems

None

Open Items.

Complete the IA OU contracting process and finalize schedules for OUs 8, 9, 10, 12, 13, and 14.

2.10 OU 10 - OTHER OUTSIDE CLOSURES

OU 10 is made up of 15 IHSSs scattered throughout the plant which consist of various hazardous waste units. Six of the IHSSs are located in the PA, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the plant. The types of wastes identified at these sites range from pondcrete/saltcrete storage and drum storage to a utilization yard with waste spills. A Final Phase I RFI/RI Work Plan is currently in preparation. The primary components of the RFI/RI Work Plan for OU 10 will be a FSP, Baseline Risk Assessment Plan (BRAP), and an EE Work Plan. IRA is scheduled to begin in early 1998.

Three additional IHSSs were transferred from other Operable Units to OU 10 after the Draft RFI/RI Work Plan was completed in FY90. The Draft Work Plan was based on the draft IAG, which was modified during final IAG negotiations. A contract modification was initiated to incorporate the three IHSSs into the Draft Work Plan and to perform general upgrades to the Plan.

During April 1992, IHSSs 124.1-124.3, the Radioactive Liquid Waste Storage Tanks were deleted from OU 10 and added to OU 9 as part of a IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992.

This Period

Scope of Work Changes. Only nonintrusive work as part of the integrated OU approach will be completed in FY93.

Technical Approach Changes This Period

The OU Managers for the IA (OU 8, 9, 10, 12, 13, and 14) have consolidated the nonintrusive portions of their Work Plans. This integration has the potential for cost savings and schedule compression based on resource and contracting consolidation, permitting, mobilization/demobilization, and training.

This approach has been incorporated into the rebaselined work packages prepared in December. The integrated approach was provided to the DOE for its input on December 9, 1992. The final rebaselined work packages were presented to the PCCB in January 1993.

IAG Milestone **Accomplishments** Submit Draft Phase I RFI/RI Work Plan 27 Nov 91 Submit Final Phase I RFI/RI Work Plan 01 May 92

February Work Activity Status

The SOW for the Industrial Area (IA) integrated field activities was completed and submitted to EG&G Procurement on January 27, 1993, for review.

IHSS's 170, 174, 176, 210, 213, and 214 all contain hazardous waste and surplus plant materials, which must be removed before Phase I characterization can begin in OU 10. The Phase I characterization is scheduled to begin in the spring of 1993. Work on characterizing IHSSs 213 and 214, which store lowlevel water will be delayed because of the lack of a suitable location for these low-level wastes to be shipped. However,

IHSSs 170, 174, 176, and 210 contain primarily plant surplus materials that can be moved. The EG&G Plant Services Department has prepared a schedule, scope, and cost estimate for the removal of surplus materials to allow Phase I characterization to begin on OU 10. This was completed on February 8, 1993.

The boundaries of IHSSs 170, 174, 176, and 210 have been marked to delineate the waste and surplus materials that need to be removed. A schedule was developed for the removal of materials out of the Property Utilization and Disposal (PU & D) Yard (IHSS 170 and 174), the 964 laydown area (IHSS 176), and IHSS 210. Work should begin the end of March to remove the excess materials out of IHSS 170.

Planned Work for March

- Work scheduled for OU 10 includes evaluation of the OU 10 Phase I RFI/RI Work Plan and to identify IHSS overlaps that may exist with other OUs in the IA. This will streamline the sampling approach for the IA OU project.
- Perform procurement activities for the MTS subcontract that is expected to be in place by the end of April 1993.

Problems

Possible severe schedule impacts will result if the waste removal process in IHSSs 170, 174, 176, 210, 213, and 214 is delayed.

The possible addition of PACs, as outlined in the Historical Release Report (HRR), to the OU 10 work scope would be a problem.

Open Items

The contractor for the IA OU field work has been selected through the MTS. Work will continue regarding the proposal and contract award process.

2.11 OU 11 - WEST SPRAY FIELD

The West Spray Field is located within the Rocky Flats Plant buffer zone immediately west of the plant security area. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from solar evaporation ponds 207-B North and Center (contaminated ground water in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105.1 acres, 38.3 of which received direct application of hazardous waste. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and ground water.

Scope Changes This

None

Period

Technical Approach Changes This Period None

IAG Milestone Accomplishments Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan 08 Jun 90 02 Jan 92

February Work Activity
Status

The final version of the proposal to rescope OU 11 field activities is at DOE for review. The proposed scope change will not impact FY93 funding, although it will require funding shifts within the work package. CDH supported the outlined proposal plan and agreed to participate in rescoping. Written concurrence and guidance to pursue this course of action is still pending.

Planned Work for March

- Rebaselining of Data Quality Objectives (DQOs).
- Begin modifications of Field Sampling Plan.

Problems

Written concurrence and guidance to pursue the rescoping of

OU 11 field activities is still pending.

Open Items

None

2.12 OU 12 - 400/800 AREA

The 400/800 Area involves assessment and remediation of the 11 IHSSs at the 400/800 Area, including: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - Northeast, South, and West of Building 460 (IHSSs 136.1, 136.2, and 136.3); Process Waste Leak - Owen Area (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

Assessment will consist of preparing a Phase I RFI/RI Work plan, which will include both an EE and a HHRA. After implementation of this Work plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a ROD, release to the public, and implementation of the plan.

During April 1992, IHSS 147.1 (the Process Waste Leaks-Maas Area), was deleted from OU 12 and added to OU 9 as part of a IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work plan approved by the regulatory agencies in April 1992.

Scope of Work Changes This Period Only nonintrusive work as part of the integrated OU approach will be completed in FY93.

Technical Approach Changes This Period The OU Managers for the IA (OU 8, 9, 10, 12, 13, and 14) have consolidated the nonintrusive portions of their Work Plans. This integration has the potential for cost savings and schedule compression based on resource and contracting consolidation, permitting, mobilization/demobilization, and training.

This approach has been incorporated into the rebaselined work packages prepared in December. The integrated approach was provided to the DOE for its input on December 9, 1992. The final rebaselined work packages were presented to the PCCB in January 1993.

IAG Milestone Accomplishments Submit Draft Phase I RFI/RI Work Plan 08 May 92 Submit Final Phase I RFI/RI Work plan 05 Oct 92

February Work Activity Status

The procurement package for the FY93 nonintrusive field work for the Industrial Area (IA) integrated OUs is complete. The MTS procurement process is progressing through its normal cycle and a Contract Award is anticipated in mid-April.

The regulatory agencies have raised questions concerning PACs as outlined in the Historical Release Report (HRR). The regulatory agencies requested PACs be investigated under OU field work. Some of the PACs could be included as part of the OU 12 RFI/RI assessment without major changes in scope or

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schedule, but other PACs outlined in the regulatory agencies' memorandum are not appropriate to be included in OU 12.

Planned Work for March

•Planned work for March will include evaluations of the OU 12 Phase I RFI/RI Work Plan to identify overlap that may exist between IHSSs with the IA.

Problems

None

Open Items

Complete the IA OU contracting process and finalize schedules for OUs 8, 9, 10, 12, 13, and 14.

2.13 OU 13 - 100 AREA

Cleanup of the 100 Area involves the assessment and remediation of 14 IHSSs including: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2 and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); and the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will consist of preparing a Phase I RFI/RI Work plan, which will include both an EE and a HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision (ROD), release to the public, and implementation of the plan.

During April 1992, IHSS 122, the Underground Concrete Tank, was deleted from OU 13 and added to OU 9 as part of a IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992.

Scope of Work Changes This Period None

Technical Approach Changes This Period The OU Managers for the IA (OU 8, 9, 10, 12, 13, and 14) have consolidated the nonintrusive portions of their Work Plans. This integration has the potential for cost savings and schedule compression based on resource and contracting consolidation, permitting, mobilization/demobilization, and training.

This approach has been incorporated into the rebaselined work packages prepared in December. The integrated approach was provided to the DOE for its input on December 9, 1992. The final rebaselined work packages were presented to the PCCB in January 1993.

IAG Milestone Accomplishments Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan

15 May 92 12 Oct 92

February Work Activity Status

The OU 13 Work Plan was submitted to the regulatory agencies on the IAG scheduled milestone date, but the Work Plan was not approved pending the resolution of three major issues:

1. Settlement of the applicable or relevant and appropriate requirements (ARARs)/Chemical Benchmark Issues - A schedule and SOW were developed to revise the Benchmark Tables. A goal was set to have a corrected table delivered to the regu-

latory agencies as soon as possible. The revised tables were completed and delivered on December 22, 1992, to the regulatory agencies. A meeting was held on February 5, 1993, with the regulatory agencies to review the tables. Completely new comments were received concerning the tables. On February 11, 1993, CDH indicated it would accept the Benchmark Table if minor changes were made.

- 2. Approval of a comprehensive surficial soils component to the FSP - Because soil sampling is not required in the IAG, this request for additional soil sampling adds to the scope and exceeds the budget. The Work Plan contains 54 surface soil samples, and this amount is enough to do a baseline risk assessment (BRA). The cost of these samples is estimated to be \$250,000. CDH has requested that a surficial soil sample be taken at every fourth HPGe or soil gas sampling location. This would expand the proposed sampling effort by 130 to 150 samples. Analysis of each additional sample will cost approximately \$3,800 or a total of \$570,000. A response to comments from CDH included a revised sampling plan, which is being prepared. The Los Alamos Technology Office (LATO) has offered to assist in reviewing the revised plan. An internal milestone of February 22, 1993, was set to submit the revised Work Plan. On February 8, 1993, CDH sent a letter to DOE stating that this issue needed to be settled or CDH would ask for stipulated penalties. CDH set a deadline of March 10, 1993, as the date to resubmit the revised OU 13 Work Plan.
- 3. Receipt and approval of HPGe SOPs by the regulatory agencies The HPGe SOP issue is still unresolved. A revised SOP was forwarded to the regulatory agencies on January 26, 1993, and CDH was concerned because all of their comments were not incorporated into the revised SOP. Meetings were scheduled during the week ending February 12, 1993, to rectify the problem. A letter from CDH set a deadline of February 24, 1993, for the receipt of the revised SOP. A tentative agreement with CDH was reached on how to resolve the SOP problem. An extension request was prepared to extend the deadline to prepare the SOP until March 8, 1993. This deadline request is still being considered.

Several of the IHSSs within OU 13 (IHSSs 117.1, 117. 2, 158, 186, 197) are used as storage areas for a variety of materials, such as scrap metal, building supplies, and other items. These items will need to be relocated out of the IHSSs in order for RI activities to begin. DOE plans to move the items in storage from one area to another during the nonintrusive activities. A letter was prepared requesting that materials be removed from IHSSs in OU 13 while remedial activities are being conducted.

A letter will be prepared to the responsible managers seeking cooperation in removal or relocation of materials from the IHSSs during remedial activities.

The revised budget for FY93 is not fully adequate to meet the next IAG milestone date of August 8, 1994, when the OU 13 Phase I RFI/RI Report is scheduled for submittal. However, considerable progress will be made on the nonintrusive activities. These activities include a visual inspection of the OU, surveying and grid location, HPGe, soil gas, ground water, and surficial soils sampling. All of these activities are being coordinated with the other integrated IA OUs.

Two new external milestones were established in the February 8, 1993, letter from CDH. February 24, 1993, is the date to resubmit an approved HPGe SOP, and March 10, 1993, is the date to resubmit the revised OU 13 Work Plan.

Planned Work for March

- Work will continue to remove and relocate materials stored in IHSSs 117.1, 117.2, 158, 186, and 197.
- Continue work on the SOPs.

Problems

CDH did not approve the HPGe SOPs as submitted on January 28, 1993.

Open Items

. Complete the IA OU contracting process and finalize schedules for OUs 8, 9, 10, 12, 13, and 14.

2.14 OU 14 - RADIOACTIVE SITES

Work at the "Radioactive Sites" involves the assessment and remediation of eight IHSSs, including: Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); and Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area which includes the Concrete Slab, Building 886 Spills, and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and a HHRA. After implementation of this work plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A FS to determine the best methods to remediate the area will be conducted as a subsequent phase to the assessment phase.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and feasibility study of the project. This process includes review and approval by EPA and CDH, followed by a ROD, release to the public, and implementation of the plan.

Scope of Work Changes None This Period

Technical Approach Changes This Period

The OU Managers for the IA (OU 8, 9, 10, 12, 13, and 14) have consolidated the nonintrusive portions of their Work Plans. This integration has the potential for cost savings and schedule compression based on resource and contracting consolidation, permitting, mobilization/demobilization, and training.

This approach has been incorporated into the rebaselined work packages prepared in December. The integrated approach was provided to the DOE for its input on December 9, 1992. The final rebaselined work packages were presented to the PCCB in January 1993.

IAG Milestone **Accomplishments** Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan

26 Jun 92 19 Oct 92

February Work Activity Status

The OU 14 Final RFI/RI Work Plan was scheduled for approval by the regulatory agencies on November 17, 1992. DOE was notified by the EPA that approval was being withheld until a scope and schedule for performing the IA/IRA Plan was agreed to by the regulatory agencies and DOE. Approval of the Work Plan has still not been received.

The final task deliverable for the OU 14 subcontract was a cost estimate for the implementation of the RI Work Plan. A draft version of this document was completed on February 3, 1993.

A final acceptance letter was transmitted to EG&G Procurement to commence close-out of the contract for preparation of the Work Plan.

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A SOW for the IA integrated OUs and the procurement package was submitted to EG&G Procurement; comments are being incorporated.

Planned Work for March

- Evaluation of the six Work Plans for consistency in the FSPs and DOOs.
- A pre-bid kick-off meeting is scheduled for March 5, 1993.
 EG&G Procurement will provide MTS subcontractor support.

Problems

The Work Plan was scheduled for approval by the regulatory agencies on November 17, 1992. DOE was notified in writing by the EPA that approval is being withheld until a scope and schedule for performing the IA/IRA Plan is agreed upon by the regulatory agencies and DOE.

Three PACs have been identified, based on the COC and its location, as probable additions to OU 14. The technical scope for these PACs may be addressed in a TM at the conclusion of Stage One activities.

Open Items

Complete the IA OU contracting process and finalize schedules for OUs 8, 9, 10, 12, 13, and 14.

2.15 OU 15 - INSIDE BUILDING CLOSURES

OU 15 is composed of seven IHSSs including: IHSS 178, Building 881 - Drum Storage Area; IHSS 179, Building 865 - Drum Storage Area; IHSS 180, Building 883 - Drum Storage Area; IHSS 204, RCRA Unit 45 - Original Uranium Chip Roaster; IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area; IHSS 212, RCRA Unit 63, Building 374 Drum Storage Area; and IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench Scale Treatment. The seven IHSSs currently have interim status under RCRA.

Closure Plans for the IHSSs were submitted to CDH during 1988 and 1989. The IHSSs were also included within the IAG to undergo a RCRA Facility Investigation/Remedial Investigation (RFI/RI). During scoping meetings for preparation of the Phase I RFI/RI Work Plan for Operable Unit No. 15 conducted between EPA, CDH and DOE during April 1992, the Closure Plan and RFI/RI Processes were combined. In affect, Clean Closure Performance Standard (6 CCR 1007-3, Part 265.111) will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings and Closure Plans will no longer be prepared. The Public comment period required for the Closure Plan process will be fulfilled through the Interim Measures/Interim Remedial Actions (IM/IRA) process of the IAG.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants and solvents containing chlorinated hydrocarbons (RCRA F001 and F002 wastes) and waste paints and waste metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. The major activity proposed is characterization of contamination associated with the OU 15 IHSSs both inside and outside buildings; and, if applicable, decontamination of the concrete floors at the indoor facilities and remediation of contamination outside buildings.

During April 1992, IHSS 215, Unit 55.13-Tank T-40, was deleted from OU 15 and added to OU 9 as part of a IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992. Similarly, IHSS 212, RCRA Unit 63 was removed from the OU 15 RFI/RI process since it is currently active as a Drum Storage Area and has been included in the Rocky Flats Plant RCRA Part B TRU Mixed Waste permit application.

Scope of Work Changes None This Period

Technical Approach Changes This Period None

IAG Milestone Accomplishments Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan 01 Jun 92 26 Oct 92

February Work Activity Status

The procurement process for obtaining a subcontractor to implement the OU 15 Phase I RFI/RI Work Plan is continuing.

Subcontract negotiations were held on February 19, 1993.

Coordination of RFP transition work, building operations, and use of RPTs for implementation of the Work Plan is ongoing.

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Unconditional approval from the regulatory agencies of the revised Final Phase I RFI/RI Work Plan is pending while the regulatory agencies continue to review the revised final document submitted on January 14, 1993.

Planned Work for March

- The subcontract for implementation of the OU 15 Phase I RFI/RI Work Plan will be awarded during the first week of March, 1993.
- Preparation for field work activities will begin upon award of a subcontract.
- Unconditional approval from the regulatory agencies of the revised Final Phase I RFI/RI Work Plan is pending while the regulatory agencies continue to review the revised final document submitted on January 14, 1993.

Problems

If necessary the approved portions of the OU 15 Phase I RFI/RI Work Plan can be implemented while waiting for the regulatory agencies' unconditional approval of the revised Work Plan. The only potential problem with unconditional approval of the Work Plan is discussed as an open item below.

Open Items

An issue regarding IHSS 212 may delay unconditional approval of the revised OU 15 Final Phase I RFI/RI Work Plan. DOE and EG&G do not concur with EPA's comment on the Work Plan regarding IHSS 212. DOE responded to EPA's comment by indicating that IHSS 212 will not be addressed as part of OU 15 as per CDH's comments on the Work Plan, and that per CDH's comments, Part VIII of the RFP RCRA Part B Mixed Permit Application and/or its modification includes Closure Plans, which will specifically address radioactive contamination as part of a mixed waste that is regulated under RCRA.

2.16 OU 16 - LOW PRIORITY SITES

This assessment activity consists of preparing a "No Further Action Justification Document" for 7 IHSSs, including: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks, Nickel Carbonyl Disposal, Water Treatment Plant Backwash Pond, and Scrap Metal Sites. In addition, the draft document must be reviewed, comments resolved, and the draft finalized.

Scope of Work Changes

This Period

Technical Approach Changes This Period None

IAG Milestone

Accomplishments

Submit Draft No Further Action Justification Document

04 Mar 92

Submit Final No Further Action Justification Document

30 July 92

February Work Activity
Status

The No Further Action Justification (NFAJ) Document for OU 16 is still pending approval despite an expected approval date of November 20, 1992. DOE is exploring the next course of action. The issue that needs to be resolved between the regulatory agencies and DOE is whether the administrative process to close out this OU is complete at this stage or whether the process needs to be carried through to a ROD. The Final NFAJ Document is the final action required by the IAG for OU 16.

Planned Work for March

•Tracking of any proposed negotiations between DOE and the regulatory agencies.

Problems

Final approval of the NFAJ document is pending. Resolution of the issue of whether to carry the administrative process

through to a ROD.

Open Items

None

2.17 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that encompass a wide variety of plans, procedures, reports, studies, and other activities required by the IAG and that apply to RFP environmental restoration activities in general. The activities include, but are not limited to, the HSP, a Sampling and Analysis Plan, a Plan for Prevention of Contaminant Dispersion, the Community Relations Plan, the Discharge Limits for Radionuclides Work Plan, Treatability Study deliverables, the Background Study Plan, Administrative Record, State Response (support for CDH oversight), Historical Release Report, Operations Management, Decontamination Facilities, Contractor yard support, ER Waste handling facilities, geologic characterization, hydrogeologic characterization, and ground water monitoring.

Scope of Work Changes This Period

On January 21, 1993, in a meeting with EPA, DOE, and EG&G, it was decided to proceed with the preparation of a Pond Water Management Decision Document to regulate RFP surface waters under CERCLA. This is the first step in developing Surface Waters IM/IRA. A scope change is pending with the RFP Change Control Board to allocate initial funds for this purpose. The Pond Water Management Decision Document will be submitted to EPA on September 1, 1993.

The Pond Water Management Decision Document milestone is the first deliverable related to a past decision to change the regulatory status of surface waters at RFP. On June 26, 1992, EPA officially informed DOE of their decision to regulate the surface water impoundments at RFP under RCRA and CER-CLA rather than the Clean Water Act's National Pollutant Discharge Elimination System (NPDES). EPA also announced that the agency would not allow the use of the upper ponds (A-1, A-2, B-1, and B-2) for containment and storage of spills. This formalizes the decision announced at a meeting with EPA, DOE, and EG&G on December 19, 1991.

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Background Study Report (Water)	15 Dec 89
Submit Draft Background Study Report (Soils)	15 Dec 89
Submit Draft Community Survey Plan	23 Jan 90
Submit Final Community Survey Plan	22 Mar 90
Submit Draft HSP	15 Aug 90
Submit Draft Quality Assurance Project Plan (QAPP)	29 Aug 90
Submit Draft SOPs	29 Aug 90
Submit Draft Plan for Prevention of	J
Contaminant Dispersion (PPCD)	19 Sep 90
Submit Draft Treatability Study Plan	21 Sep 90
Submit Draft Community Relations Plan (CRP)	01 Nov 90
Submit Final HSP	12 Nov 90
Submit Revised Background Study Report Submit Final CRP	21 Dec 90
Submit Final CRP	22 Jan 91
Submit Final QAPP	01 Mar 91
Submit Final SOPs	01 Mar 91

Submit Draft Discharge Limits	
Radionuclides Plan (DLRP)	05 Apr 91
Submit CRP RS	21 Jun 91
Submit Final Treatability Study Plan	03 Jun 91
Submit Final PPCD	22 Jul 91
Submit Final DLRP	16 Sep 91
Submit Final PPCD and RS	25 Nov 91
Submit Draft Historical Release Report (HRR)	08 Jan 92
Submit RS for DLRP	31 Jan 92
Submit Final HRR	03 Jun 92

February Work Activity Status

Sitewide Treatability Studies

Plutonium Solubilization Technical Task Plan - Technology Development and the LATO are working together to develop a Technical Task Plan (TTP) to study Plutonium Solubilization for Remediation Applications. The purpose of this TTP is to develop an understanding of the soil chemistry at RFP and the relationship to how plutonium is found in the RFP soils. The deadline for submitting TTPs is March 12, 1993.

Annual Report - The Sitewide Treatability Studies annual report is an IAG milestone. The annual report includes a summary of the status of each of the sitewide projects, a literature review of new and emerging technologies, and a summary of other relevant environmental projects at RFP. Comments from DOE and other reviewers were transmitted to the subcontractor for incorporation into the FY92 report. The final report is due to the regulatory agencies on March 8, 1993.

Soil Washing Demonstration (NRT) - Nuclear Remediation Technologies (NRT), a subsidiary of General Atomics located in San Diego, California, has proposed to test its proprietary soil washing process on a sample of RFP plutonium-contaminated soil. The test work will be carried out with no charge to RFP other than the costs for obtaining and shipping the soil sample and for someone from EG&G to witness the test work.

Initial testing began this week using a combination flotationattrition scrubbing-leaching process to separate and recover plutonium from the soil. The goal of this work is to produce a clean soil fraction that could be used as back fill at RFP and a "contaminated" fraction that would contain the plutonium. Results of this test work will be used to design an optimized cleaning process. The optimized testing will be witnessed sometime in early March.

Plutonium (pu) in Soils - Physical Separation (TRU/Clean) - The TRU/Clean process (physical separation) was identified in the Final Sitewide Treatability Plan for further test work and evaluation to determine how effectively it might remove plutonium contamination from RFP's soils. Initially this test work was planned to be a part of the Plutonium in Soils Integrated Demonstration (ID). However, the ID has been put on hold,

and DOE has contracted with Lockheed Environmental Systems and Technologies Company to conduct testing of the TRU/Clean process with RFP Soils.

The Final Draft of the Treatability Study Work Plan and Responsiveness Summary to EPA comments were delivered to the regulatory agencies on February 10, 1993.

Results from the radiological screening samples indicate that the bulk samples (55-gallon drums) will exceed the 2,000 picocurie (pCi) limit. This indicates that the bulk soil sample should comply with 49 CFR Section A, Radioactive Material for Shipment and Packaging. The Traffic Department will ship the bulk samples if all packaging requirements are met. Instructions on packaging and labeling the samples were received from the Traffic Department. The shipment will comply with low-level radioactive material regulations, and all soil must be shipped in white drums according to plant standards.

Instructions from the Waste Guidance Department were received during the week ending February 12, 1993. Since the Traffic Department did not ship anything on February 12, 1993, sampling began on February 15, 1993, to allow time for the necessary paperwork to be done properly.

Colloid Polishing Filter Method (Techtran) - This process uses a proprietary chemical complexing agent to remove heavy metals and/or radionuclide contaminants from waste water or ground water. The contaminants are removed from the water by precipitation and filtration. Ultimately, the contaminants are contained in a dried filter cake and the treated water is returned to the environment. Preliminary tests carried out at DOE in 1991 were favorable.

The direction from DOE is that EPA will support a site demonstration of this technology at RFP. EPA is currently preparing a Memorandum of Understanding (MOU) to transfer funding for this project to DOE. However, neither the exact amount of the time or the funding is known at this time. DOE has received the MOU from EPA that will transfer funding for this project from EPA to DOE. DOE is reviewing the MOU before deciding how to proceed.

Uranium Analyzer - The uranium analyzer has been installed and is operational in the treatability laboratory. Calibration studies have shown that the analyzer is capable of determining uranium concentrations on the order of 10 parts per billion (ppb). The uranium analyzer will be used to determine uranium concentrations in the influent and effluent streams from various treatability study projects. The results will be used to measure the efficiency of the treatability process for removing uranium.

Pondcrete Evaluation Report - The Pondcrete Evaluation Report is designed to evaluate the overall pondcrete process and to investigate potential treatment alternatives for the pondcrete material. The report is scheduled to be completed in August 1993.

A literature search on solidification/stabilization processes has been initiated. A key word search was conducted and the abstracts located are being evaluated for applicability at RFP.

Lockheed Plasma Melter - Lockheed Environmental has asked EG&G Rocky Flats to participate in a plasma melter demonstration project along with EG&G Idaho. The purpose of the project is to investigate the performance of plasma melting technology for the destruction of hazardous organic compounds in soils and to determine the characteristics of the vitreous waste form produced by the process. EG&G Rocky Flats will contribute some plutonium-contaminated soil for bench scale testing.

This test work was originally scheduled to begin in April. As of January 14, 1993, the test work was postponed until later in the summer because of contractual problems at EG&G Idaho.

Peer Review of Technology Selection Process - EG&G has authorized the Rocky Mountain University Consortium to begin a review of the Final Treatability Studies Plan with particular emphasis on the technology review and the selection processes. The review is based on a SOW prepared by Colorado State University (CSU).

EG&G met with CSU on January 27, 1993, to discuss the goals of the review process. This meeting produced a tentative schedule for the review work. Following are highlights of the schedule.

Form a review committee	February 12, 1993
• Review the committee's evaluation and	recommendations
for the Technology Selection Process	March 19, 1993
 Draft of technology screening results 	April 19, 1993
 Comment on EG&G/DOE draft 	May 3, 1993
• Receive final document from Consortium	June 15, 1993

The review committee was formed and is now reviewing the technology selection process as described in the Final Treatability Studies Plan.

National Renewable Energy Laboratory (NREL) Request for Proposal for Solar Detoxification Demonstration Project - In November 1992, a response to a request for proposal from the NREL was submitted. The request for proposal is titled "Development of a Demonstration System for Solar Water Detoxification."

The proposal calls for a cost sharing arrangement with a maximum contribution from NREL of 70 percent of the demonstration costs. EG&G will participate in a joint submittal with SAIC and Radian, Inc. If this proposal is one of those selected by NREL, the project would start in the spring of 1993. Expected total cost of this proposal is \$100,000. EG&G's portion of this project cost would be \$15,000, plus man hours for onsite support. The revised Sitewide Work Package includes funding for this project.

A problem has arisen in the terms of the request for proposal (RFP). The proposal does not allow NREL to cost share with other federal money (i.e., EG&G). The proposal will be resubmitted to NREL as an unsolicited proposal that will not be subject to the restrictions of the RFP.

Inductively Coupled Plasma (ICP) Mass Spectrometer (MS) - The revised work package for the Sitewide Treatability Studies Program now contains funding to purchase and install an ICP-MS in the Treatability Laboratory in Building 881. The addition of this equipment will significantly increase the analytical capability of the laboratory and will result in lower analytical expenses and faster turnaround time for treatability studies conducted in the future.

DOE has given approval to purchase the ICP-MS, and Procurement has sent out the appropriate bid packages. According to the vendor, there is currently a 4-month delivery time, with the expected shipment date in early June. This is a delay of over 3 months from what was originally planned. Based on the quoted delivery date, the immediate impact is that the ICP-MS will not be ready for use to analyze the products from the adsorption treatability study that is scheduled to begin in June. The completion of the adsorption project could be delayed because of the excessive time required for samples to be sent offsite for analysis.

Status of Treatability Laboratory in Building 881 - A Treatability Study Laboratory is being developed at RFP. The laboratory will be used to conduct some of the treatability studies for the Sitewide Program. The laboratory is ready for experimental work. The first work scheduled to be carried out is the TRU/Clear (potassium ferrate precipitation) Treatability Study. This work is tentatively scheduled to begin in early March 1993, as soon as the Work Plan is completed and approved.

TRU/Clear - TRU/Clear is the brand name for a proprietary precipitating agent based on the use of ferrite ions. The TRU/Clear process belongs to a company named ADC, located in Colorado Springs. Preliminary test work carried out at RFP has shown favorable results.

The contract with Acculabs to do the analytical work has been approved and is now in place. A Work Plan for the test work is being written and is scheduled to be completed by the end of February. Once the Work Plan is completed and approved, the test work will begin in the treatability laboratory in Building 881.

A draft of the "Quality Assurance Addendum for the TRU/Clear Precipitation Process Work Plan" was received. This document is being reviewed and the final version will be included as a part of the Treatability Study Work Plan.

Sitewide Treatability Studies on Ion Exchange and Adsorption - Ion Exchange and Adsorption are two of the technologies identified in the Final Sitewide Treatability Study Plan for further test work and evaluation to determine how effectively they might remove various contaminants from surface and ground water at RFP.

After reviewing 95 percent of the document, it was determined that the Final Sitewide Treatability Plan did not meet EG&G's expectations. The subcontractor did not incorporate comments from earlier reviews, and the test plan did not meet technical expectations. The document was resubmitted to the subcontractor to make revisions. On February 25, 1993, the revised, rewritten Work Plan was received from the subcontractor, and the document is being reviewed by EG&G! If the document meets all established requirements, it will be forwarded next week to DOE and to the regulatory agencies for review and comments.

Bioremediation - The regulatory agencies have requested that DOE consider bioremediation as a potential technology for use at RFP. Bioremediation covers a broad area of topics and, therefore, a literature review of only topics that apply to RFP is being explored. The literature review for bioremediation continues. Extensive computer searches are under evaluation for key articles and reviews. An outline of significant topics was prepared, and a summary report based on the literature study was started.

COMMUNITY RELATIONS Upcoming Public Meetings

March 3, 1993 - The Fundamentals of Radiological Risk Assessment at the Rocky Flats Plant, Sponsored by EPA, CDH, DOE, and EG&G Rocky Flats, Session 1 - Fundamentals of Radioactivity by Dr. T. Borak, CSU and Fundamentals of Radiobiology by Dr. G. Roessler, University of Florida, at 7:00 p.m. - 9:00 p.m., at Denver Marriott West, 1717 Denver West-Marriott Blvd., Golden.

March 10, 1993 - Environmental Restoration and Waste Management Five-Year Plan Public Comment Meeting, from 7:00 p.m. - 9:00 p.m., at Ramada Hotel, 8773 Yates Dr., Westminster.

March 11, 1993 - Health Advisory Board Meeting, sponsored by CDH. Topic: Phase II Health Study, from 6:00 p.m. - 8:00 p.m., Ramada Hotel, 8773 Yates Dr., Westminster.

March 13, 1993 - Rocky Flats Health Risks: The Science Behind the Issues. Free and open to the public. An educational symposium sponsored by the School of Medicine and the Center for Environmental Journalism of the School of Journalism and Mass Communication at the University of Colorado. Limited Space Available. Call 232-1966.

March 16, 1993 - The Fundamentals of Radiological Risk Assessment at the Rocky Flats Plant. Sponsored by EPA, CDH, DOE, and EG&G Rocky Flats. Session 2 - Data Collection/Evaluation and Exposure Assessment by B. Lavell, EPA and Toxicity Assessment by M. Boyd, EPA and Radionuclide Risk Characterization and Risk Management by Rick Roberts, EG&G Rocky Flats, 7:00 p.m. - 9:00 p.m., Denver Marriott West, 1717 Denver West - Marriott Blvd., Golden

March 23, 1993 - Quarterly Environmental Restoration Public Information Meeting, at 7:00 p.m. - 9:00 p.m., Ramada Hotel, 8773 Yates Dr., Westminster.

SECTION 3. ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for routine environmental monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDH upon request from the EM Department and EG&G Rocky Flats, Inc. The schedules are lengthy; therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and to obtain split or duplicate samples.

3.1 SURFACE WATER AND SEDIMENTS

- Each of the Surface Water Stations (approximately 20 stations) is sampled quarterly.
- Each of the Sediment Stations (approximately 10 stations) is sampled quarterly.
- Each surface water and sediment sample is analyzed for the following parameters:

CLP TCL VOAs
Field Parameters
Dissolved Oxygen
Radionuclides
TDS/TSS

Metals CLP TAL and Non-TAL Specific Conductivity

Major Anions

Temperature pH

Nutrients

 Additionally, sediment samples are analyzed for: CLP-Semi VOAs, CLP-Pesticides/PCBs Herbicides-69

3.2 SOILS

- Each of the Soil Stations (located at 1- and 2-mile radii from the plant center) is sampled annually.
- Each soil sample is analyzed for Pu and Am.

3.3 GROUND WATER

A total of 410 ground water stations are sampled quarterly; this includes alluvial wells, bedrock wells, and pre-1986 wells. Approximately one-third of the wells are monitored monthly for water levels.

Each ground water sample is analyzed for CLP, TCL, VOAs, TAL, and metals, as well as the following parameters:

Radiochemical Parameters	Inorganic Parameters	Field Parameters
Gross Alpha	Nitrate/Nitrite	DO
Gross Beta	Total Phosphorous	Specific Conductivity
Plutonium	Ortho-Phosphate	Temperature
Americium	Ammonia •	Turbidity
Strontium	TDS	рН
Tritium	Fluorine	•
Uranium	Sulfate	
Cesium	Carbonate	_
	Bicarbonate	

DOE, Rocky Flats Plant -

Radiochemical Parameters

Inorganic Parameters

Field Parameters

TSS

Total CLP Metals & additional metals Dissolved CLP & additional metals

Cyanide

CLP Volatile Organic Compounds

SECTION 4. CONTRACTOR/SUBCONTRACTOR IDENTIFICATION

Contractors and subcontractors being used on the RFP ER Program and the work they are performing are identified on the following list as required by paragraph 13 of the IAG.

<u>QU</u> 1	<u>Project</u> Assessment	<u>Subcontractor</u> Ebasco	Sub- Subcontractor Dames & Moore Stoller Corp.	Work Description OU 1 RFI/RI field work (drilling, well development/ completion, sampling) and RI report and CMS/FS report	Start Date Apr 91
1	Remediation	Bruner		OU 1 IRA ion exchange system	Feb 91
1	Remediation	E.T. LaFore		Installation of Phase II-A treatment system equipment for OU 1 IRA	Jun 91
1	Remediation	IT Corporation	CH2MHii/OMT	B-891 Treatment System Operations	
1	Remediation	Jennison		Construct Phase II-B French drain at OU 1 IRA	Aug 91
1	Remediation	P.S.I.		OU 1 IRA UV/Peroxide System	Aug 91
2	Assessment	Woodward-Clyde	Ogden	OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Sep 90
2	Assessment	Ebasco	S.M. Stoller Corp.	Environmental Evaluation	Feb 91
2	Remediation	Steams Rogers	£"	Performance Specification for Chemical precipitation/membrane/filtration system for South Walnut Creek Phase of OU 2 IRA	Jun 91
2	Remediation	TBD:		Mfg/Install chemical precipitation/ filtration unit for South Walnut Creek Phase of OU 2 IRA	Dec 91
3	Assessment	IT Corporation	CH2M Hill	OU 3 Field Work and RI Report	Apr 92
3	Assessment	IT Corporation	USGS	OU 3 Reservoir Sediment Sampling and Report	Aug 92
3	Assessment	MRI		Wind Tunnel/Soil Resuspension Study	Aug 92
4	Assessment	Applied Environment	ı	Implement the Phase I RFI/RI Work Plan, includes drilling, sampling ** radiation surveys, etc.	Aug 92

			Sub-		*
<u>OU</u> . 5	Project Assessment	Subcontractor ASI	Subcontractor Dames & Moore Blackhawk Geoscience Walsh & Assoc. Fugro Geosciences Lagne Envir. Service Utility Mgmt. Service S.M. Stoller Adv. Terra Testing	Work Description Implementation of OU 5 Work Plan (excluding EE)	Start Date Jun 92
5	Assessment	S.M. Stoller	Auv. Tella Tesulig	Implementation of EE section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward Clyde	Lane, Ogden Geo Environmental	OU 6 RFVRI Work Plan and Quality Assurance Addendum	Feb 90
6	Assessment	S.M. Stoller		EE	Sep 92
7	Assessment	S.M. Stoller	Walsh & Assoc.	OU 7 RFI/RI Work Plan including EE Plan and QA Addendum	Apr 90
11	Assessment	•		OU 11 RFI/RI Work Plan including EE Plan and QA Addendum	Oct. 91
15	Assessment	S.M. Stoller		OU 15 RFVRI Work Plan	
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91
sw	PCB Assess.	Ebasco	Stoller Corporation	Prepare PCB Assessment Report	Jan 92
SW	Adm. Record	QuantaLex		Maintain IAG Administrative Record	Oct 90
SW	Geo. Char.	ASI		Geologic Characterization, Data Base, and graphics	. Feb 90
SW	Monitoring	IT Corporation		Analytical Services for ground water, surface water, and sediment	Jul 90
SW	PPCD	Ebasco		PPCD	Jun 90
SW	QA ·	SAIC		Develop and implement QA program and field operations oversight	Dec 90
PM	Support	Ebasco	Stoller Corporation	Program Management Support	Feb 90